

are three blue "bars" or lunules, of which the upper two normally coalesce.

Both *Aglais urticae* and *Vanessa io* are variable species and a host of forms of both species have been named. I do not propose to discuss these forms in detail this evening, but rather to indicate certain features in the variation of both species in which the two tend to approximate in marking, and I shall endeavour to show, by reference to such forms, what I believe to be the origin of certain of the markings of *V. io*. I should therefore say, in passing, that I consider *V. io* the younger species from the phylogenetic aspect and believe it has developed from an ancestor of a "tortoiseshell" facies, probably with a considerable resemblance to *Aglais urticae*. On this assumption the remainder of this paper is based and I shall therefore describe shortly the "progressive" forms of *A. urticae*, showing an advance in the direction of *V. io* and the "atavistic" aberrations of *V. io* showing indications of the more primitive markings of *A. urticae*.

"Progressive" variation in the markings of *A. urticae* occurs in conjunction with purely aberrant details in the same specimen, notably the union of the costal maculae, as in *V. io* ab. *belisaria*: *V. polychloros* ab. *testudo*; and parallel aberrations of *P. c-album* and other species. The occurrence of this form of variation throughout the group is suggestive of the markings of the primitive common ancestor, but this is not a subject about which sufficient can be ascertained to tempt us into a digression here. I shall therefore proceed to consider the progressive variation of *Aglais urticae*.

(To be continued.)

## Notes on the Lepidoptera of the Constantinople District (Asia) and Brusa.

By MAJOR P. P. GRAVES, F.E.S.

I had little time for collecting in 1922, but added two new species of Rhopalocera to the local list. The spring and early summer visits to Chamlija gave negative results as far as *Pontia* (*Synchlœ*) *chloridice* was concerned. The fields it had frequented in fair numbers during the previous year had been ploughed up and it had disappeared. *Pararge roxelana* was common enough in early June as was *Eugonia polychloros*. On June 18th, I paid a visit to the Alemdagh Forest, which for once in a way was clear of brigands. I took a worn female of *Brenthis hecate* approaching *caucasica* about two miles from Alemdagh village, and in the forest found Argynnis abundant. The species seen and taken were *Dryas pandora*, fairly common, *D. paphia* not fully out, *Issoria lathonia* abundantly, *Argynnis aglaia* on the way to the race *ottomana*, but already showing signs of wear, though the females were rare; two male *A. cydippe*, one of which had scarcely any silver marking on the underside of the hind wings, while the other was a large but otherwise fairly normal specimen, and abundance of *B. daphne*. The second brood of *B. dia* was just emerging. In one clearing *Melitæa athalia* race *mehadiensis* was frequent though going over. Dr. Reverdin has kindly determined it as *athalia*, not *pseud-athalia*. Another interesting discovery was *Heteropterus morpheus* of which I took a single female. This is the first time that this species has been recorded from Asia Minor to my knowledge. Occasional

worn *Heodes alciphron* race *meliboens* occurred. *Coenonympha arcanius* and *Epinephele jurtina* were common and among the latter I took a large, but unluckily damaged, female *E. lupinus*, a species which I have only taken very locally at Chamlija previously.

At Brusa on July 7th-9th I had to confine myself to the plain. There, and for that matter in the outskirts of the town, *Hipparchia briseis* was common. I looked out for *Pieris manni* but am not satisfied that I obtained it. *P. manni* females and those of some of the Mediterranean *P. napi* of the summer brood are not easy to distinguish. *Pyronia tithonus* occurred rarely on the plain. *Plebeius argus* (*aegon*) was not rare and seemed to be fairly normal in type. I found no *Chrysophanus rutilus* in the marshes, and but few *Ereves argyades*. *L. camilla*, *D. pandora*, worn out *M. didyma* and a fair number of *P. aegeria* var. *intermedia* with occasional *P. maera* var. *orientalis* were also seen or taken. A large black Satyrid, probably *S. statilius* race *fatuaeformis*, Vty., was seen from the train near Yuruk Ali station at about 1,500 ft. elevation near Mudania.

I may here note that my second-brood *Hesperia malvae*, taken in the Constantinople district during the last two years, have all proved to be *malvae* after the examination of the genitalia by Dr. Reverdin.

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### Six weeks among the Butterflies of Eastern Switzerland. (With Plate.)

(Concluded from page 79.)

By B. C. S. WARREN, F.E.S.

The beautiful weather now broke; a walk through the woods to St. Moritz, on the afternoon of the 13th, after a day's rain, enabled me to box a pair of *Polyommatus eros* from a flower-head. The next day was wet too, and on the 15th we left Pontresina in a regular downpour, and reached Preda to find it turning very cold. By that evening it was snowing hard, and all Sunday the snow lay about three inches deep; Monday was little better, though it cleared up in the afternoon. The following day however, the 18th, was cloudless, and as the top of the Pass was still under snow, we went down; going as far as Bergün, getting on the old road below the railway viaducts.

Insects were abundant, though in no great variety of species. The only kinds not hitherto met with were *Erebia pharte* and *Heodes virgaureae*; for the rest the following were taken or seen, and were more or less plentiful: *Hesperia malroides*, *H. albens*, *H. serratulae*, *Aricia eumedon*, *A. medon*, *Cyaniris semiargus*, *Lycaena arion*, *Plebeius argus* (*argyrognomon*), *Papilio machaon*, *Parnassius delius*, *Aporia crataegi*, *Brenthis euphrosyne*, *B. amathusia*, *Argynnis aglaia*, and *Erebia melampus*, *E. euryale*, and *E. stygie*.

The next day was again wet, but the 20th was as perfect as could be wished. We started early for the top of the Pass, with great hopes of finding *Erebia glacialis* and *Melitaea asteria*, the latter of course being our principal object. The walk up, being early in the day, produced little; the short cut from the Weissenstein Inn to the Teufels Tal only produced one *P. delius*. The wild Teufels Tal, on the contrary, gave us one ♀ *P. delius*, one *Pontia callidice*, two *M. aurinia*, race *merope*, several *B. pales*, one ♀ *Erebia glacialis* and several *E. gorge*, and one *Pyrameis cardui*. A remarkable list for such a locality.